Wood Density Radial Variation of *Balanites aegyptiaca* (L.) Delile Grown in Sudan

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ABSTRACT

Wood density is a variable influencing many of the technological and quality properties of wood. Previous studies have shown that wood density is an important indicator for wood end-use as it strongly affects the general quality of most of the wood products. Understanding the radial variation pattern of wood density is important for its end use. The present study was carried out to determine the pattern of wood density radial variation of *Balanites aegyptiaca* tree species. Thirty healthy trees were chosen randomly from 10 forests distributed in four states in Sudan, namely, Blue Nile, North Kordofan, South Kordofan and White Nile. Two discs of 10 cm thickness were cut from each tree, the first at 10% from the merchantable height and the second at 90%. One strip (includes tree's pith) was taken from each disc. The wood basic density was determined for five radial portions representing the distance from pith to bark (10%, 30%, 50%, 70% and 90%). The density was measured based on dry weight and green volume. ANOVA was used to test the variation among the five selected radial portions, using SPSS (version 18.0) program. The results revealed that *Balanites aegyptiaca* wood density follows the increased pattern from pith to bark. The results showed also significant differences among the five selected portions from pith to bark.

Key words: *Balanites aegyptiaca*; density; radial variation
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